



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,768	09/30/2003	Roland D. Green	700706.90238	4455

7590 07/11/2007
Nicholas J. Seay
Quarles & Brady LLP
P O Box 2113
Madison, WI 53701-2113

EXAMINER

NAGPAUL, JYOTI

ART UNIT	PAPER NUMBER
----------	--------------

1743

MAIL DATE	DELIVERY MODE
-----------	---------------

07/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/674,768

Applicant(s)

GREEN ET AL.

Examiner

Jyoti Nagpaul

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Amendment filed on June 19, 2006 has been acknowledged. Claims 1 and 7-13 are pending.

Response to Amendment

Rejection of Claims 1,7-10 and 13 as being unpatentable over Root in view of Foder has been withdrawn in light of applicant's amendments and arguments.

Rejection of Claims 11 –12 as being unpatentable over Root in view of Foder in further in view of Bell (US 5858194) has been withdrawn in light of applicant's amendments and arguments.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 1743

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1 and 7-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rava (US 5545531) in view of He (US 20030049862).

Rava teaches a method for loading samples on a microarray to perform hybridization reactions. The method comprises the steps of placing the samples to be loaded onto a sample loading array (300), the samples located on the sample loading array in physical alignment with the location of the sub-arrays (320) on the microarray (substrate and a surface to which an array of probes is attached) (See Col. 7, Lines 60-65). The sample loading array (300) being a planar member having two planar surfaces with a plurality of micro-channels (310) formed extending into it between the two surfaces. The samples are loaded into the micro-channels (310). (See Figure 3) Additionally, Rava teaches placing the sample loading array (300) in contact with the microarray under conditions so that molecules in the samples can hybridize to probes in the aligned sub-arrays (320). (See Figure 3) Rava further teaches the use of a vacuum. (See Col. 8, Lines 25-27) Rava further teaches hydrophobic materials in the spaces between the arrays such as a group bearing phosphoramidite. (See Col. 9, Lines 43-68)

Art Unit: 1743

Rava further teaches the sample is deposited into the plurality of micro-channels using a delivery system capable of simultaneous delivery of sample to multiple sites.

Rava fails to teach a porous membrane on the surface of the sample loading array away from the subarray and the conditions including fluid placed on the membrane to permit the samples in micro-channels to flow into contact with the substrate on the microarray so that a hybridization reaction can occur. Rava further fails to teach a gasket located between the sample loading array and the microarray.

He teaches a high-throughput biological assay device. The device comprises a porous membrane (70) on the surface of the sample loading array (10) and fluid is placed on the membrane to permit the sample in the microchannels (22) so that a hybridization reaction can occur. (See Figure 11)

It would have been obvious to one of ordinary skill to modify the device of Rava to provide a porous membrane on the surface of the sample loading array and fluid is placed on the membrane to permit the samples in micro-channels to flow into contact with the substrate on the microarray so that a hybridization reaction can occur in order to selectively pass liquids through the device. (See [0057])

Gaskets are conventionally known in the art. It would have been obvious to one having ordinary skill to modify the device of Rava to provide a gasket between the sample loading array and microarray in order prevent cross contamination between samples.

Response to Arguments

5. Applicant's arguments with respect to claims 1 and 7-13 have been considered but are moot in view of the new ground(s) of rejection. Refer above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JN

